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June 23, 2014

Sarah P. Flanagan, Esquire
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Office of Regional Counsel
U.S. EPA Region 2
290 Broadway
New York, NY 10007

Re: Administrative Settlement Agreement and Order on Consent for Removal Action
EPA Region 2 CERCLA Docket No. 02-2012-2015
Long Term Monitoring Plan, Dispute Resolution

Dear Sarah:

As requested by EPA Region 2 in Jennifer LaPoma's May 22, 2014 letter to Robert Law, de maximis, inc., enclosed please find the Cooperating Parties Group's ("CPG") more specific written statement detailing the concerns the CPG believes have not been adequately addressed by EPA with respect to the Long Term Monitoring Plan at River Mile 10.9.

The CPG appreciates EPA's offer to work with the CPG to attempt to resolve the dispute, including scheduling a meeting.

Very truly yours,

William H. Hyatt, Jr.

Enclosure
cc: Ms. Jennifer LaPoma

CPG List of Issues for LTMP Dispute Resolution
Dated June 23, 2014

The following information provides an overview of EPA Region 2 ("Region 2" or the "Region") Long Term Monitoring Plan ("LTMP") objectives, the CPG's prior written comments with respect to those objectives, the Region's responses to CPG comments, and the CPG's objections to those responses, which would serve as the points for discussion during a future meeting.

- **Region 2 LTMP Objective 1 -** Performance monitoring of the RM 10.9 cap is to demonstrate chemical stability of the cap.
    - **CPG Comment on Objective 1 -**
    - The RM 10.9 Removal Action was implemented to reduce the risk associated with the direct contact exposure to sediments by people due to elevated concentrations of COPCs in RM 10.9 surface sediments. The cap physically prevents direct contact to underlying sediment by river users. As an added benefit, an active layer was included to further enhance the protectiveness of the cap. In the near term, the surface of the cap is likely to be recontaminated by sediment deposition which is likely to be in the low 100s of ppt of TCDD – two orders of magnitude less than the pre-dredge surface of the RM 10.9 Removal Area. The CPG does not agree with Region 2's rationale for an aggressive short-term chemical monitoring program of the RM 10.9 cap. It is unnecessary to evaluate the short-term effectiveness of the cap to chemically isolate COPCs when the primary goal of the Removal Action and the construction of the cap were to remove and reduce the direct contact risk due to the presence of elevated concentrations in the surface sediment.
    - On the Hudson River, Region 2 requires monitoring of the Phase 2 engineered caps for physical integrity and chemical isolation effectiveness. The chemical isolation effectiveness monitoring will occur in designated sentinel areas 10 years after completion of cap construction in those areas and then at 10-year intervals, or as soon as practical after a flood event exceeding the design recurrence interval for those caps. For Onondaga Lake, long-term monitoring of the cap includes routine physical and chemical monitoring which is anticipated to occur 5, 10, 20, and 30 years after construction begins. For the Lower Passaic River Study Area, EPA has required no chemical monitoring at the Lister Avenue Phase 1 Removal Action site. Region 2's requirements for the RM 10.9 Removal Area are completely inconsistent with the chemical monitoring requirements for frequency and schedule established at other Region 2 capping sites such as the Hudson River and Onondaga Lake.
    - The CPG believes that only physical monitoring is sufficient and required to monitor the effectiveness and integrity of the cap. If the RM 10.9 cap is similar and consistent to that implemented as any final remedy for the LPRSA, then the need for long-term chemical monitoring for the cap should be determined as part

of the overall LPRSA long-term monitoring plan and regular 5 year reviews. This appears to be the rationale developed for the Hudson River and Onondaga Lake and should apply to the RM 10.9 Removal Action as well.

- **Region 2 Response -**

- The cap is designed to isolate the contaminants in sediments underlying the cap from surface water and biota exposed to surface sediments. The proposed monitoring evaluates whether that objective has been achieved. The monitoring requirements at other sites and operable units referenced in your comment are not relevant to this discussion. They have been instituted for other purposes and there are site-specific differences.

- The provided approach is not unprecedented. The proposed application at RM10.9 is consistent with its highest use which is cap performance monitoring - is the cap isolating contaminants in the underlying sediments as intended?

- Vertically-installed passive samplers to evaluate pore water contamination have been installed at numerous capping sites throughout the country, such as:

    - Anacostia River (Washington DC)
    - McCormick and Baxter Portland Harbor Site (Portland, OR)
    - Tennessee Products (Chattanooga, TN)
    - Pacific Sound Resources (Seattle, WA)
    - Wyckoff/Eagle Harbor Site (Bainbridge Island, WA)
    - San Jacinto River Waste Pits (Baytown, TX)
    - Roxana Marsh (Hammond, IN)

- These sites have had multiple deployments of the samplers and have analyzed samples for PAHs at all except San Jacinto River, where samples were analyzed for dioxin.

- **Region 2 LTMP Objective 2 -** Region 2's objective of pore water monitoring (a) to verify the cap is performing as expected by monitoring 3 zones of the capped sediment and (b) determine the influence of both underlying sediment concentrations and overlying water concentrations on the cap and cap performance.

    - **CPG Comment on Objective 2 -**

    - CPG is not aware that Region 2 has required Tierra/Maxus/Occidental (TMO) to evaluate the impact of overlying surface water concentrations and sediment deposition on the Phase 1 backfill area. Since Region 2 has identified backfill as a potential post dredging measure among its FFS alternatives, it is unclear and appears inconsistent as to why Region 2 is requiring evaluation of this parameter for the RM 10.9 engineered cap while the same has not been required for the backfill of the Phase 1 Removal Area.

- **Region 2 Response -**

- Monitoring requirements referenced in your comment are not relevant to this discussion.

CPG Objection to the Region's Responses to Comments on Objectives 1 and 2 - In its May 1 response, the Region summarily dismisses without due consideration the CPG's concern about the Region's inconsistent and selective application of post-remediation monitoring within the Diamond Alkali site as well as other Region 2 sites such as the Hudson River. During the conduct of the 17-mile LPRSA RI/FS, the Region has selectively invoked regional consistency in some situations (i.e., human health risk assessment, reference locations and conditions) when it suit its needs and ignored the need for regional consistency in other instances (i.e., post-remedial monitoring at the TMO Phase 1 removal area). Region 2 is acting arbitrarily and inconsistently by requiring post remedial chemical monitoring of the RM 10.9 Removal Area while (a) requiring no chemical monitoring at the TMO Phase 1 Removal Area and (b) developing a significantly more stringent monitoring program for the RM 10.9 Removal Area than other representative sediments sites within Region 2 with no scientific basis or justification for the disparate application.

- **Region 2 LTMP Objective 3 -** Region 2's objective to evaluate the relative difference between the 3 layers.

  - **CPG Comment on Objective 3 -**

  - There are multiple reasons that could be causing the differences including post capping deposition of contaminated sediments on the surface – (which has no bearing on the effectiveness of the cap); residuals within the active sand layer and the least of which is transport through the actives layer in the short time envisioned by Region 2 for this monitoring program. As envisioned by Region 2 – this sampling program will not resolve and identify those possible reasons for detections of COPCs in or above the cap's active layer.

  - **Region 2 Response -**

  - A temporal evaluation of concentration changes through the cap profile elucidates processes responsible for contamination. The EPA has identified locations and frequency of sampling which focus on monitoring 3 depth zones of the capped sediment (a) including the contaminated layer beneath the cap – to determine baseline conditions; ((b) Active carbon layer – to determine if breakthrough is occurring (1 or 2 samples); and (c) within the armor stone layer – to measure the influence contamination in the water column is having on the cap.

  - **CPG Comment on Objective 3 -**

- The COPCs are unlikely to be breaking through the active layer in the next five years and it is unlikely that this would be observable for at least 100 years and up to 250 years based on the CAPSIM model predictions.

- **Region 2 Response -**

- This testable hypothesis should be verified. If short term performance is verified, monitoring will transition to a longer time frame.

- **Region 2 LTMP Objective 4 -** Region 2 proposes locations and frequency of sampling which focus on monitoring 3 depth zones of the capped sediment (a) contaminated layer beneath cap – to determine baseline conditions (b) active carbon layer – to determine if breakthrough is occurring (1 or 2 samples).

    - **CPG Comment on Objective 4 -** See previous comments.

    - **Region 2 Response -** See previous responses.

CPG's Objection to the Region's Responses to Comments on Objectives 3 & 4 – The Region's proposed chemical monitoring plan is ill-conceived and not scientifically supported. The monitoring plan will not resolve the source of contamination changes in the cap because it is subject to ambiguous, confounding and unresolvable influences such as (a) deposition of contaminated sediments on the surface of the cap and (b) the inclusion of residuals within the cap that will not be resolved as part of this monitoring plan. The Region continues to disregard these factors in its discussion of its chemical monitoring objectives. Moreover, no chemical break-through is predicted to occur for decades and possibly centuries, which Region 2 has acknowledged in chemical monitoring plans for other Region 2 sediment sites but not for this site. Region 2's imposition of inconsistent requirements at similar sites within the Region is arbitrary and capricious.

- **Region 2 LTMP Objective 5 -** Divide the capped area into at least 4 sections, based on criteria such as (a)Thickness of cap placed; (b) Groundwater influx/upwelling

    - **CPG Comment on Objective 5 -**

    - There are only minor differences in active layer thickness –what are the criteria for selecting different categories? Moreover, the areas where the thickness of active layer is reduced are characterized by underlying substrates of hardpan, rocks, rip-rap and native material where the potential for remaining contaminated sediment is minimal.

    - **Region 2 Response -**

    - The criteria reflect cap conditions and environmental/chemical processes that are known to affect cap performance. Areas should be differentiated on the basis of the variation in relevant criteria. Specific values should be derived from an analysis of site data. With respective to underlying substrates of hardpan, rocks, and rip rap, these types of substrates have a well-documented propensity

to harbor ample contaminated material (consider Grasse River, NY; Bradford Island, OR; Manistique Harbor, MI; Cumberland Bay, NY).

- **CPG Comment on Objective 5 -**
- What is Region 2's criteria for differentiation of areas?
- **Region 2 Response** - See response to 3(b)(i)

CPG Objection to the Region's Responses to Comments on Objective 5 – Even assuming the CPG agreed with the need for chemical monitoring – which it does not – the Region fails to provide objective criteria to implement its proposed chemical monitoring plan. Instead it has provided only vague generic statements that provide no guidance for implementation. In addition, the Region's requirement that the CPG implement a pore water sampling in hard pan and rocky near-shore areas is inconsistent with the Region's proposed pore water sampling program.

- **Region 2 LTMP Objective 6** - The Region has identified monitoring for no-dredge zone potential edge effects on capped areas flanking this zone.
  - **CPG Comment on Objective 6 -**
  - Region 2 has not required TMO to evaluate edge effects in the Phase 1 back fill adjacent to the undredged Phase 2 areas. Why is the evaluation of edge effect critical to evaluating the effectiveness of the RM 10.9 cap adjacent to non-dredge areas but not the boundary of the dredged Phase 1 area and Phase 2 areas and other undredged areas at Lister Ave and in Harrison Reach?
  - **Region 2 Response -**
  - Decisions at other operable units relating to backfill are not relevant to establishing cap performance at RM 10.9.

CPG Objection to the Region's Response to Comment on Objective 6 – The Region's May 1 response is non-responsive and clearly demonstrates the arbitrary nature of the Region's decision-making of matters related to the 17-mile LPRSA. It is undeniably arbitrary to require the CPG to monitor the "edge effect" of the no-dredge zone at the RM 10.9 Removal Area but not require monitoring between the dredged TMO Phase 1 area and the undredged TMO Phase 2 area. There is no technical rationale to require one and not the other; both have dredged areas that have been filled or capped with clean surface material surface material that would be impacted by proximate non-dredge areas.

- **Region 2 LTMP Objective 7** - The Region has directed the CPG to select at least 5 discrete locations within each section to monitor including (a) a minimum of at least 20 sampling locations across the cap must be monitored; and (b) the number of locations will increase if more than 4 distinct areas are identified
  - **CPG Comment on Objective 7 -**

- CPG believes Region 2's recommended number of locations is excessive, unneeded and inconsistent with other long-term monitoring plans implemented at other Region 2 dredging projects such as the TMO Phase 1 removal and the Hudson River project.
- **Region 2 Response -**
- It is not apparent what the CPG's criteria and rationale is for "excessive." Increased sample size increases confidence that the cap is being monitored at a resolution capable of establishing cap performance. If great variability is seen in results, greater density may be needed. If low variability is seen in results, lesser sampling density may be warranted.
- **CPG Comment on Objective 7 -**
- What is the criteria for identifying addition areas?
- **Region 2 Response -**
- See response to 3(b)(i)

CPG Objection to the Region's Responses to Comments on Objective 7 - The Region has provided no technical basis for the its assertion that there are five distinct regions within the RM 10.9 cap and has not identified any objective criteria used to define these regions. In addition, the Region has not identified the criteria for increasing the number of distinct regions. Moreover, this construct of the Region with respect to distinct regions and the density of the sampling in each is excessive, unneeded, arbitrary, and inconsistent with long-term monitoring plans implemented at other Region 2 dredging projects such as the TMO Phase 1 removal and the Hudson River project.

- **Region 2 LTMP Objective 8 -** Collect samples 3 times within the first 5 years – sample during the season when the highest degree of upwelling would be expected.
  - **CPG Comment on Objective 8 -**
  - What is EPA's basis for sampling frequency? Pore water concentrations are unlikely to show any changes in 1-5 years. What are requirements for QA/QC samples, duplicates, splits etc.?
  - **Region 2 Response -**
  - The timeframe is constrained primarily by a project-specific need for information. Three sampling points is the minimum needed to establish a trend. Five years represents a short-term monitoring timeframe to support near-term decisions, while permitting biannual (yr 1,3,5) instead of annual sampling (yr 1,2,3). That increment increases the time over which processes are monitored. Information from this time frame will be used to establish long-term monitoring requirements.

- **Region 2 LTMP Objective 9 -** This plan will result in the analysis of 60 to 80 samples 3 times prior to evaluation, for a total number of samples of 180 to 240.
    - **CPG Comment on Objective 9 -**
    - This number of samples required by Region 2 for a 5 acre cap appears to be excessive with no clear cut data quality objectives established.
    - **Region 2 Response -** Again, is unclear what the basis is for an "excessive" determination. The alternate view is that this sample size is the bare minimum to establish cap performance. DQOs and the project QAPP will be written by the Settling Parties. The basic elements of DQO requirements have been articulated in written and verbal correspondence.

CPG Objection to the Region's Responses to Comments on Objectives 8 & 9 - The Region acknowledges in its May 1 response that this data collection is not driven by the actual physics and chemistry of contaminant movement that will occur at the RM 10.9 Removal Area. Region 2 has previously acknowledged at other capping sites that chemical monitoring is not required for at least 10 years because concentrations are not expected to show short-term changes. The Region's chemical monitoring directives at the RM 10.9 are arbitrary, inconsistent with requirements at other Region 2 sites, and without scientific or technical basis. Furthermore, the CPG disagrees that the Region has fully developed and provided to the CPG a set of data quality objectives consistent with EPA guidance.

- **Region 2 LTMP Objective 10 -** The Region has identified parameters to analyze including (a) use PAHs as an indicator contaminant class at all locations and analyze at least 4 locations for dioxins and PCBs as well.
    - **CPG Comment on Objective 10 -**
    - Is this required for all 3 events envisioned by Region 2 at all three depths?
    - **Region 2 Response -**
    - Yes

CPG Objection to the Region's Response to Comment on Objective 10 – As indicated above, chemical monitoring is not necessary for at least 10 years because short-term changes in concentrations are unlikely. Moreover, considering the estimated times for chemical break-through of PCBs and dioxins, the proposed sampling of these compounds lacks technical merit and would serve no purpose.

- **Region 2 LTMP Objective 11 -** The EPA has identified a performance standard trigger location the upper portion (i.e., upper 1/3) of the active layer
    - **CPG Comment on Objective 11 –**

- It is unclear why the upper layer would be the trigger – this portion of the cap is most affected by surface water and deposition.
- **Region 2 Response -**
- The conceptual cap model is that concentrations below the cap are greater than those depositing on the cap, so those concentrations (if they ever could get to the upper 1/3 of the active layer) would be lower than any trigger value. The concern restates the need to monitor the armor layer along with the other layers so that contaminant concentrations associated with deposited material/surface water are understood and can be placed in context with concentrations within the cap and the native layer. The trigger location could also be the lower layer. That location could be considered an early warning indicating saturation of the cap's ability to sequester contaminants.

CPG Objection to the Region's Response to Comment on Objective 11 – The Region's rationale for establishing the upper third of the active layer as the trigger interval for some set of yet-to-be defined actions during the first five years is scientifically unsound since in the near-term period and for the foreseeable future the upper portion of the active layer will be most affected by the deposition of sediment from overlying surface water and not by the migration of contaminants from beneath the cap.

- **Region 2 LTMP Objective 12** - Trigger concentration should be based on modeled pore water concentrations predicted by the CapSim model.
  - **CPG Comment on Objective 12 -**
  - Since CAPSIM does not predict break-through for at least 100 years, it is unclear whether this is an unambiguous, appropriate or even measureable trigger for short term monitoring program in years 1-5.
  - **Region 2 Response -**
  - CAPSIM is used to model performance. The concentrations are only as unambiguous, appropriate, and measurable as is the output from the selected model. It appears to be a contradiction that the model can be used to unambiguously assert the cap will be effective, but the concentrations projected by the model can't be used to measure effectiveness.

CPG Objection to the Region's Response to Comment on Objective 12 - The Region's position is contrary to the physics and chemistry of the site. It also ignores the fact that, unless there is an actual physical failure of the cap in vicinity of the monitoring location, chemical movement (i.e., break-through) is not going to be observed or occur for decades if not centuries. There is no technical basis or support for establishing the upper third of the active layer as the trigger location.

- **Region 2 LTMP Objective 13** – The Region directs the CPG to consider collecting samples from both the bottom third and upper third of the active layer to further inform results.

    - **CPG Comment on Objective 13 -**

    - The dredged surface was well-characterized in the RM10.9 pre-design investigation and at Region 2's directive extensively resampled at the conclusion of the dredging. Characterizing the bottom of the active layer is unnecessary. CPG Comments 1 and 3 address sampling the upper third of the active layer.

    - **Region 2 Response -**

    - Sampling within the active layer establishes the performance of the active layer and is therefore necessary. Perhaps this comment is supposed to say "Characterizing below [not "the bottom of"] the active layer is unnecessary"? It seems that's the case because of the text re: post-dredging sediment concentrations. Extrapolated sediment concentrations do not provide pore water concentrations at a specific location. The native sediment concentration is necessary to establish what contaminants at what concentrations will affect the performance of the cap at the location of sampling.

    - Note that the CapSim model will need to be revisited to provide concentration estimates for the years when monitoring will occur, and may need to be revisited to provide upper bound estimates.

CPG Objection to the Region's Response to Comment on Objective 13 – The CPG disputes that two sampling intervals within the active layer are necessary and that any sampling in the active layer is needed for at least 10 years. As stated in previous CPG objections, the chemistry and physics of contaminant transport do not support the need for these data for at least a 10 year time interval.

In addition, the Region's failure to direct the TMO parties to develop and implement the RM 10.9 LTMP as part of its response actions to the 2012 TMO UAO is unexplained and arbitrary. The CPG has raised this issue previously with the Region and it has been summarily dismissed.